Remarks

Withdrawal of the outstanding rejections and allowance of the above-identified application in view of the above-made amendments together with these responsive remarks is respectfully requested.

By the above made amendments, claims 1-40 remain pending of which dependent claims 8, 23, 30 and 40 were amended to specifically set forth the expression corresponding to the acronym SIP. Namely, SIP corresponds to Session Initiation Protocol, consistent with that defined in the present Specification. Also, an editorial revision was implemented in the "wherein" clause of independent claim 34 to remove a discovered informality therein. Specifically, the expression "computing device" was reverted to the term server in order to be consistent with the expressions employed in that claim.

The invention is a method for reducing server load comprising receiving requests for a service at a first server from a plurality of client devices, determining to identify at least one other server to provide the service to at least some of the plurality of client devices, requesting an address of at least one second server from a server address management entity, creating a resource identifier at the second server, and redirecting at least some of the client devices to get the service from the second server. According to the invention, the first server provides the service to the second server to be then provided to some of the plurality of client devices, therefore, reducing loading on the first server and providing a more efficient service to the plurality of client devices (see claim 1 and Figs. 2, etc.). Dependent claims 2-19 further set forth various example details of the method for reducing the server load according to the present invention.

According to claims 20-23, the invention is a system for reducing server load

that comprises a first server and a tree of servers comprising at least one second server. In accordance with the claimed system, the tree of service provides a service receipt from the first server to a plurality of client devices, in which the loading on the first server and each of at least one second server are optimized so as to provide the service to the plurality of client devices more efficiently (see Figs. 1-2, etc.).

In accordance with claims 24-33, the invention covered is an article comprising a storage device with instructions stored therein, the instructions being such that, when executed, they cause a computing device to perform the receiving of requests for a service from a plurality of client devices, determining to identify at least one server to provide the service to at least some of the plurality of client devices, requesting an address of at least one second server from a server address management entity, creating a resource identifier at the at least one second server, and redirecting at least some of the plurality of client devices to get the service from the at least one second server. In accordance with independent claim 24, the computing device is such that it provides the service to the at least one second server to be then provided to some of the plurality of client devices, therefore, reducing the loading on the computing device and providing more efficient service to the plurality of client devices.

The invention is also related to a server which contains instructions stored therein that when executed cause the server to perform similar set forth featured aspects as that related to claims 24+.

An example of a distribution server tree (DST) covered by the present invention, although not limited thereto, can be seen with regard to the Fig. 1 example embodiment, discussed on page 11, [0032], etc. An example of identifying

branch servers such as in connection with the formation of a DST to reduce the load of the main server and thereby also maintain a high speed performance is illustrated with regard to Figs. 2-5 of the drawings, etc., although not limited thereto. Fig. 5 is an example illustration of a created DST according to the present invention which is discussed on page 13, paragraph [0037] of the original Specification.

According to the outstanding Office Action, claims 1-2, 4-15, 19-24, 26-34 and 36-40 stand rejected under 35 USC §103(a) over the combination of Arnold et al (USP 6,167,449) in view of Rosenberg et al, "SIP: Session Initiation Protocol", IETF Publication; and claims 3, 16-18, 25 and 35 stand rejected under 35 USC §103(a) over Arnold et al in view of Rosenberg et al, *supra*, and further in view of Ahuja et al (USP 6,175,869). As will be shown hereinbelow, the invention set forth according to claims 1-40 could not have been rendered obvious in a manner as that alleged in these rejections. Therefore, these rejections are traversed and reconsideration and withdrawal of the same is respectfully requested.

Arnold et al disclosed a system for solving the problem of locating services in the internet through employing a software interface between applications for locating services on a network and providers of identification services. In Arnold et al, the software interface includes a Network Service Location (NSL) manager program and its associated network access components that allow the applications to locate services without having to specify the exact location of a provider and without being configured with a network protocol used by the provider of the services. In other words, Arnold et al disclosed a computer-implemented method and an apparatus for identifying and locating computer network services.

Arnold et al's scheme gives an application the ability to search for network services in the manner independent of the network communication protocol used by

the network. The invention can thus operate as a layer of abstraction between the Transport and Network Layers and the Application Layer of the Open Systems Interconnect (OSI) Reference Model of network architecture and suite of protocols. According to Arnold et al, the client application is given the ability to browse for network services based on the type of service (e.g., remote file access, mail, Web, domain name registration, etc.), rather than having to know the name or location of the service or the underlying network communication protocol used by the service. In this regard, some of the contemplated service name identification protocols used to find their requested types of services, according to Arnold et al, include Internet-related protocols such as Domain Name Service (DNS) and Lightweight Directory Access Protocol (LDAP) as well as Service Location Protocol (SLP), running on top of the Transport Control Protocol/Internet Protocol (TCP/IP).

As is clearly apparent, Arnold et al were concerned with solving totally different problems than that covered according to claims 1+, 20+, 24+ and 34+. Namely, Arnold et al's disclosure is strictly concerned with solving the problem of locating services in the Internet. On the other hand, the present invention is concerned with promoting an efficient load-balancing mechanism for a given service and given stream of that service. In this regard, the present invention features a method/system for effectively implementing a distributed server tree where a server becomes a main server and identifies additional servers elsewhere and creates temporary resource identifiers when the main server has a large load or when there are large numbers of users in a particular area or domain that the main server is providing a service to. The main server transfers or redirects some users into these additional servers. This leads to the creation of a more efficient distribution of service. In accordance with this, also, the other servers, which become branched

servers along with the main server now form a DST (distributed server tree) that reduces loading on the main server and provides more efficient service to the clients. Such is achievable in connection with the method covered by claims 1+ and the system covered by claims 20+. The set forth article/server according to claims 24+ and 34+, respectively, also lead to the reducing of the load on the main server in connection with providing a more efficient service to the clients.

It is stated in the rejection that Arnold et al teaches a "system[which] includes a network look-up procedure that allows client applications to access SIP servers.., " and, also, according to Arnold et al, the "system includes interface for receiving a request for a type of service and que[ries] on the SIP server, ..." However, a careful review of Arnold et al's Specification shows that the term SIP, as used therein, refers to Service Identification Protocol and not as that employed in the present Specification and, correspondingly, with regard to the claimed subject matter. Specifically, Arnold et al defines "SIP" as an abbreviation of service identification protocol (see column 3, lines 37-39) and has nothing to do with Session Initiation Protocol (SIP) as recited in the claims of the present application.

Arnold et al discloses a system that tries to locate services, in general, whereas the invention is concerned with providing the service itself through the equitable distribution of the content streams through the formation of a DST. That is, the present invention relates to dealing with a particular service (DST) consisting of several constant streams. It is submitted, Arnold et al neither disclosed nor suggested using a hierarchical tree for reducing the server load.

Consistent with that called for in the present claims, the server load reduction scheme implemented in accordance with the present invention can start with one server providing the service, however, over time, it can evolve and create a tree of

service which reduces the load for service and network links. Clearly, such has nothing to do with Arnold et al's teachings.

As was shown hereinabove, Arnold et al, it is submitted, clearly failed to teach the present invention, set forth in claims 1+, 20+, 24+ and 34+. It is admitted in the rejection that Arnold et al "does not specifically disclose load-balancing mechanism for a given service and a given stream of that service." Rosenberg et al's teachings of a Session Initiation Protocol (SIP) as an application-layer control protocol are applied in that regard. However, as was shown hereinabove, the SIP servers according to Arnold et al pertain to a different protocol application, namely, the SIP servers in Arnold et al are service identification protocol servers and not session initiation protocol servers. In other words, Arnold et al's application is completely different from that presently called for and, therefore, there would have been no reason for one of ordinary skill to apply the different protocol standard employed by Rosenberg et al to that of Arnold et al's system. That is, there would have been no motivation for one of ordinary skill to have applied the teachings of Rosenberg et al to modify Arnold et al's system in such a way that would have led to the invention according to independent claims 1, 20, 24 and 34 and, also with regard to the corresponding dependent claims thereof, respectively. For at least the above reasons, the invention according to claims 1-2, 4-15, 19-24, 26-34 and 36-40 could not have been realizable even over the combined teachings of Arnold et al and Rosenberg et al.

Ahuja et al was cited, allegedly, for "teach[ing] a technique for server allocation, which includes dispatch mechanisms for dispatching request to servers based on the servers load....", and that "[i]t would have been obvious to include such mechanisms of notion of mechanism with Arnold et al in view of Rosenberg et

al for redirecting clients request base of server workload in order to balance load [for] improving network service efficiency."

Ahuja et al discloses client-side techniques for processing client requests to a network service hosted by a pool of servers. With regard to the illustrated embodiment in Fig. 3A of Ahuja et al, the system 30 includes a number of clients 32-i which communicate with servers 34-j over a communications network 36 (e.g., the internet). The system 30 is suitable for implementing HTTP-based network services over the network 36. The client's 32-i and servers 34-j communicate over TCP/IP connections established over the network 36 in the conventional manner (see column 4, line 14 et seq.). Such, it is submitted, is clearly different from the technique employed with regard to the present claimed subject matter in which there is effected a distributed server tree where a server becomes a main server which identifies additional servers elsewhere and creates temporary resource identifiers when the main server has a large load or when there are large numbers of users in a particular area or domain that the main server is providing a service to. In other words, Ahuja et al's teachings of server allocation notwithstanding, Ahuja et al does not overcome the deficiencies discussed above with regard to the combined teachings of Arnold et al and Rosenberg et al. Therefore, even if one of ordinary skill would have considered jointly the teachings of Arnold et al, Rosenberg et al and Ahuja et al, the invention according to independent claims 1, 20, 24 and 34 and further, according to the corresponding dependent claims thereof, could not have been realizable therefrom.

Therefore, in view of the above rebuttal arguments, reconsideration and withdrawal of the outstanding rejections as well as favorable action on all of the

presently pending claims, i.e., claims 1-40, and an early formal notification of allowability of the above identified application is respectfully requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR §1.136. Please charge any shortage in the fees due in connection with the filing of this paper, to the Deposit Account of Antonelli, Terry, Stout & Kraus, LLP, Dep. Acct. No. 01-2135 (0172.40835X00), and please credit any excess fees to such deposit account.

Respectfully submitted,
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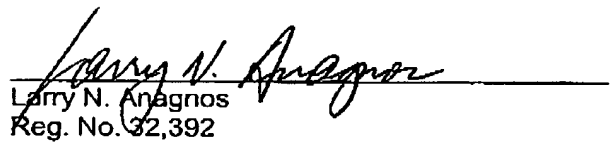

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